Exhibit L
Part 1 of 2

PELA

MAXINE ROCK DISPOSAL AREA

HYDROLOGIC AND WATER QUALITY INVESTIGATIONS

(PELA File 436200)

Prepared for

Alabama By-Products Corporation
Post Office Box 218
Goodsprings, Alabama 35560

By

P. E. LaMoreaux & Associates, Inc.
Consulting Hydrologists, Geologists
and Environmental Scientists
Post Office Box 2310
Tuscaloosa, Alabama 35403
(205) 752-5543

October 5, 1984

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PLAINTIFF'S EXHIBIT
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INTRODUCTION

This report summarizes all hydrologic and water quality investigations performed to date by P. E. LaMoreaux and Associates, Inc. (PELA) at the "old coal processing waste disposal area" at Alabama By-Products Corporation Maxine Mine. Recommendations given herein are based on the assessment of these investigations. This report also chronicles the work elements completed by Alabama By-Products Corporation (ABC) to date in fulfillment of the requirements of the Alabama Surface Mining Commission regarding reclamation, monitoring, and protection of the environment.

RECOMMENDATION

PELA recommends that Alabama By-Products Corporation seek release for any and all further reclamation responsibility for the old coal processing waste disposal area. This recommendation is based on the results of hydrologic and water quality investigations at the site which show that the post-law refuse rock does not negatively impact ground-water and surface-water quality at the site and that reclamation activities have been successful and in compliance with the regulations.

CONCLUSIONS

1. The system of surface-water drainage ditches constructed at the rock disposal area is effective in segregating run-off from pre-law and post-law disposal areas. The run-off from pre-law areas flows into two ditches, one on the east side of the valley and one on the west. The post-law area drains into a ditch parallel to the pre-law ditch on the west side of the valley. A cross-over of the two ditches was constructed in order to maintain separation of post-law and pre-law water on the west side. The unique system of drainage segregation at the site prevents mixing of pre-law and post-law water and enables the collection of surface-water samples which have drained from only post-law or pre-law rock disposal areas. In this way, the quality of pre-law and post-law water may be determined and comparisons made.

2. The clay cap and vegetative cover installed by ABC over the post-law rock disposal area are effective in minimizing infiltration of rainfall and erosion of post-law materials and prohibit recharge to ground water in or through the post-law and pre-law refuse beneath the capped area. Percolation tests were conducted on the clay cap of the post-law area and on the materials in the pre-law rock disposal areas. The infiltration rates for the capped area were 10 to 100 times less than those for the pre-law materials.

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3. The mean values of water quality parameters including specific conductance, total dissolved solids, sulfate, total iron, and total manganese are consistently lower for surface-water samples collected from post-law areas than water samples collected from pre-law areas. The mean value of pH for water samples from post-law disposal areas is consistently higher than that for water samples from pre-law disposal areas. These values indicate that the quality of water from post-law areas is significantly better than that of water from pre-law disposal areas.

The quality of surface water from post-law surface-water site SW-2 was compared to the effluent limits for maximum daily discharge. In all cases, the concentrations of total iron and total manganese in water collected from site SW-2 were in compliance. In two of the three samples of water from post-law disposal areas collected from site SW-2 since establishment of vegetation was completed, the value of pH was slightly lower than the effluent limitations (5.5 and 5.6 compared to the limitation of 6.0). The acidity may have been slightly low due to variations in the hydrologic environment. Prior to establishment of vegetation, the pH was even lower at site SW-2 ranging from 4.1 to 5.3.

Alabama By-Products Corporation performed monitoring of discharge from the pond at site SW-2 on 17 occasions since November 22, 1983. The pH of the discharge ranged from 5.7 to 9.0 and was lower than 6.0 in only one sample (5.7). The concentration of

total iron was less than the limits for all samples and the total manganese was less than the limit for 6 out of the 7 samples analyzed.

4. Surface water from the post-law disposal area does not contribute to degradation of ground-water and surface-water quality as evidenced by the low values of water quality parameters (with the exception of pH) for samples collected from post-law areas. Because the quality of water from post-law areas is significantly better than the quality of water from pre-law disposal areas, the water from post-law areas does not and cannot contribute to water quality degradation at the site.

5. Wells MO-7, MO-8, and MO-9 (dry wells) have provided no evidence to date that significant ground water is present within post-law or pre-law refuse rock beneath the capped area. Monitoring has been performed for over a year, therefore, seasonal fluctuations in hydrologic conditions have been considered. Future hydrologic conditions should be similar to those monitored to date.

6. The post-law, rock refuse, area does not contribute to degradation of water quality at the site as evidenced by the absence of ground water in post-law refuse rock and the quality of surface water draining from the capped area (post-law, rock refuse, area). Based on monitoring data, there is no ground water in the post-law refuse.

The water from pre-law rock disposal areas in upgradient wells MO-5 and MO-6 is generally more mineralized than water from downgradient well MO-3 during normal and wet hydrologic conditions. During dry periods the water in upgradient wells is generally of better quality than that in the downgradient well.

A comparison of surface-water quality from post-law and pre-law disposal areas indicates that the post-law surface-water quality is better than that of water draining from pre-law areas. Therefore, the capped area (post-law refuse area) does not significantly contribute to water quality degradation.

7. A comparison was made of water quality from well MO-3 for samples collected prior to and after capping of post-law refuse was completed. Values of physical and water quality parameters -- iron, manganese, total dissolved solids, sulfate, specific conductance, and pH -- indicate that the overall quality of water in well MO-3 is better since the post-law area was capped.

WORK ELEMENTS

The major work elements completed by Alabama By-Products Corporation and P. E. LaMoreaux and Associates for the Maxine rock disposal area project are listed below. The chronology of completion of these elements and division of these elements into individual tasks are given in the following report section.

A. Aerial photograph interpretation of the area to locate rock disposal areas and identify the chronology of waste disposal.

B. Reclamation of post-law rock disposal area in compliance with the regulations:

1. Designing and constructing a system of ditches to segregate surface-water drainage from post-law and pre-law areas.
2. Landscaping rock disposal area, including contouring and terracing.
3. Selective rip-rapping of eroding areas in ditch systems.
4. Covering post-law rock disposal area with approximately two feet of compacted clay.
5. Seeding clay cover.

C. Completion of infiltration/percolation tests in pre-law and post-law materials to document rates of infiltration and assess effect of post-law capped area on infiltration.

D. Development of an appropriate monitoring program in post-law and pre-law rock disposal areas in order to:

1. Define the occurrence of ground water and document the magnitude of water level fluctuations in ground-water monitoring wells.

2. Identify water discharge fluctuations in drainage ditch systems.

3. Define surface-water and ground-water quality in pre-law and post-law waters and distinguish between the two, if possible.

4. Determine whether post-law ground and surface water contribute to the degradation of ground- and surface-water quality in the area.

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PROJECT CHRONOLOGY

Chronicled herein in Table 1 are the project work elements.

Table 1. Project chronology.

Date	Work Element
9/1/82 to 9/25/82	Completion of acquisition and evaluation of 1956, 1979, and 1982 aerial photographs to identify rock disposal locations and chronology.
	Field reconnaissance of disposal area.
	Selection of proposed sites for test drilling and monitoring well(s) installation.
11/19/82	Field reconnaissance of proposed diversion ditches.
12-22/82	Completion of infiltration tests on pre-law rock disposal materials.
1/18-19/83	Drilling and completion of monitoring wells MO-3 and MO-4 in pre-law rock disposal areas.
2/4/83	Instrumentation of monitoring wells MO-3 and MO-4 with Stevens Type F continuous water level recorders.
	Completion of monitor run.
3/2/83	Completion of monitor run.
3/31/83	Completion of monitor run.
	Initiation of grading activities on post-law rock disposal areas.
4/29/83	Completion of monitor run.
5/2/83	Completion of monitor run.
6/7/83	Completion of monitor run.
	Capping of post-law area with clay is in progress.
	Basins at sites SW-1 and SW-2 are being reworked.

Table 1. Project chronology.
(continued)

Date	Work Element
7/12/83	Completion of monitor run.
	Capping of post-law rock disposal area is completed.
	Basin at site SW-2 is being reworked.
7/29/83	Drilling and construction of wells MO-5 and MO-6 in pre-law refuse is complete.
	Drilling and construction of wells MO-7, MO-8, and MO-9 in post-law refuse is complete.
	Re-working of the east ditch to drain pre-law rock disposal area in progress.
	Construction of west parallel ditch system near completion.
8/26/83	Installation of Stevens Type F water level recorders on wells MO-5, MO-7, MO-8, and MO-9.
	Construction of parallel ditch system has been completed.
8/29/83	Completion of monitor run.
9/14/83	Completion of monitor run. (This is the first monitoring run performed on a bi-monthly schedule.)
11/3/83	Completion of monitor run.
1/5/84	Completion of monitor run.
2/7/84	Completion of monitor run.
3/5/84	Completion of monitor run.
5/2/84	Completion of monitor run.
7/5/84	Completion of monitor run.
9/5/84	Post-law capped area infiltration tests.

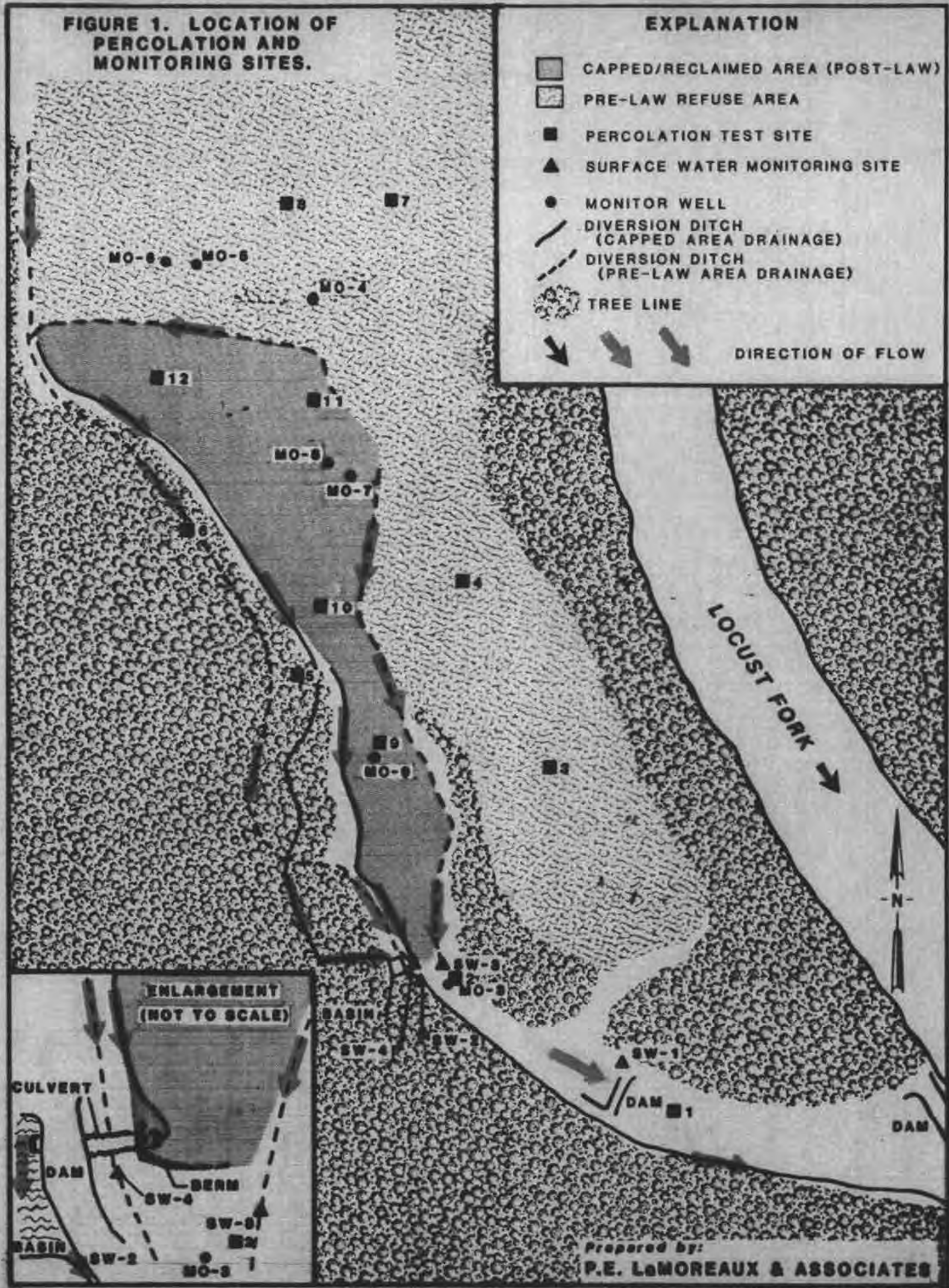
PERCOLATION TESTS

To reclaim the post-law area in compliance with the regulations, Alabama By-Products Corporation graded the top of the post-law refuse rock, applied a clay cap approximately two feet in thickness, and seeded the cap. This procedure was designed to minimize erosion and infiltration in the capped area. To affirm that infiltration over the capped area is less than that over the pre-law refuse, infiltration tests were run on both the pre-law and post-law areas. The test results indicate that percolation rates in the post-law capped area are 10 to 100 times less than those in the pre-law area.

Tests were performed to determine rates of infiltration at various sites in and near the old rock disposal area at the Maxine Mine on December 20 and 21, 1982, in accord with work elements described in the outline for assessment of hydrologic conditions (letter to Douglas R. Cook, July 23, 1982). Percolation tests were performed in the post-law area on September 5, 1984. The percolation test sites are located on Figure 1.

Methodology

The percolation tests were performed according to "Sanitarian's Handbook, Theory and Administrative Practice for Environmental Health", fourth edition, prepared by Ben Freedman, M.D., M.P.H. A 6-inch diameter hole was dug, 18 to 20 inches deep at each site. The bottom and sides of the hole were scratched and roughened to provide a natural soil interface. All loose materials were removed from the hole



APPROXIMATE SCALE 1"=640' (12/1981 AERIAL PHOTOGRAPHY)

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and two inches of pea gravel were placed in the hole to prevent bottom scouring. The hole was then filled with 12 inches of water over the gravel. After the water seeped away, the test began. Six inches of water was then poured into the hole and water level measurements were taken every ten minutes for an hour, keeping the hole filled with six inches of water. The decline which occurred within the final ten minutes was used to calculate the rate of infiltration.

Test Results

The results of the percolation tests on native soils and on pre-law reference rock are presented in Table 2. The lowest rates of infiltration were at sites 5 and 6, both undisturbed, natural overburden areas near the rock disposal. The highest rate of infiltration was at site 1, in the valley fill below the dam. The average infiltration rate for the tests performed in the pre-law rock disposal area (excluding sites 5 and 6 in the undisturbed area) is 17.4 inches/hour (1.3×10^{-2} cm/sec). In comparing the old material with undisturbed terrain, the rate of infiltration is about 2.3 times greater in the old material.

The results of percolation tests on the clay cap covering the post-law materials are given in Table 3. The average value of percolation for these sites is 0.35 inch/hour (1.0×10^{-4} cm/sec). This average rate of percolation is almost 50 times smaller than that for pre-law refuse rock, indicating that the clay cap is effective in reducing percolation at the site.

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Table 2. Results of percolation tests in pre-law refuse rock and native soil.

Site Number	Rate of Infiltration	
	inches/hour	centimeter/second
1	25.4	1.8×10^{-2}
2	19.8	1.4×10^{-2}
3	13.4	9.7×10^{-3}
4	20.5	1.5×10^{-2}
5	5.6	4.1×10^{-3}
6	7.8	5.6×10^{-3}
7	9.9	7.1×10^{-3}
8	15.5	1.1×10^{-2}

Table 3. Results of percolation tests in the clay cap over the post-law refuse rock.

Site Number	Rate of Infiltration	
	inches/hour	centimeter/second
9	0.07	4.7×10^{-5}
10	0.23	1.6×10^{-4}
11	0.19	1.3×10^{-4}
12	0.92	6.5×10^{-5}

GROUND-WATER/SURFACE-WATER INVESTIGATIONS

The objectives of the ground-water/surface-water investigations performed in compliance with the regulations were to:

1. Define occurrence of ground water and document water level fluctuations;
2. Define surface-water and ground-water quality in pre-law and post-law water and distinguish between the two, if possible;
3. Determine whether post-law ground and surface water contribute to the degradation of ground- and surface-water quality in the area.

To accomplish these goals, a number of monitoring wells were drilled. All well locations are shown on Figure 1. Monitoring wells MO-3, MO-4, MO-5, and MO-6 were drilled in the pre-law rock disposal area upgradient and downgradient from the capped area. Monitoring wells MO-7, MO-8, and MO-9 were drilled in the capped area.

Well MO-7 was installed to monitor the water level fluctuations and water quality of ground water, if present, in the pre-law refuse beneath the capped post-law refuse for comparison of water quality in the post-law refuse in well MO-8, located next to MO-7. Well MO-9 was installed to monitor the quality and water level fluctuations of water in the post-law refuse, downgradient from wells MO-7 and MO-8.

The installation of monitoring wells was completed in two phases. Monitoring wells MO-3 and MO-4 were installed in January 1983. Drilling and construction of wells MO-5, MO-6, MO-7, MO-8, and MO-9 was completed in July 1983. Lithologic and well construction diagrams are

given in Figures 2 through 8. A methodology of the construction of wells MO-5, MO-6, MO-7, MO-8, and MO-9 is included in Appendix I. The lithologic logs are given in Appendix II.

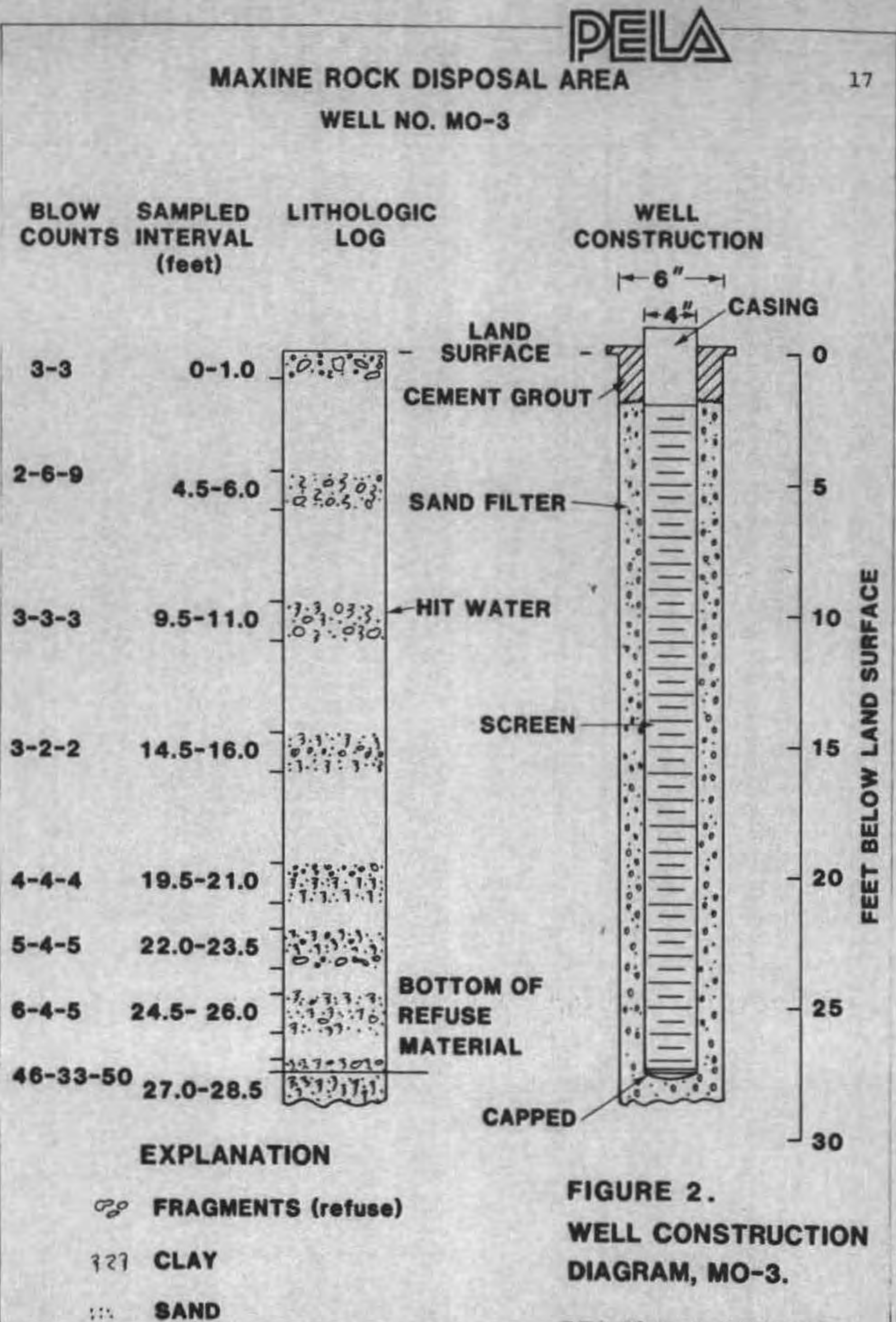

FIGURE 2.
WELL CONSTRUCTION DIAGRAM, MO-3.

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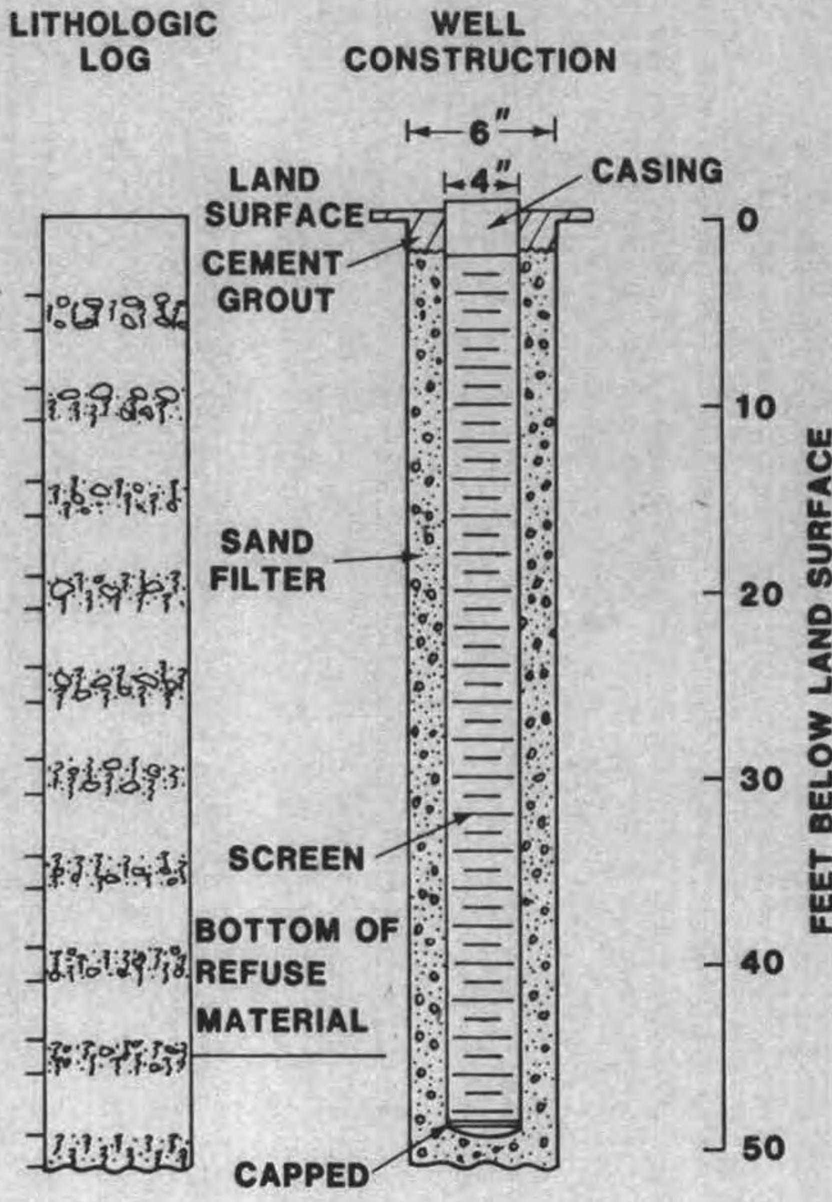
MAXINE ROCK DISPOSAL AREA
WELL NO. MO-4

BLOW COUNTS	SAMPLED INTERVAL (feet)
4-3-3	4.5-6.0
5-3-6	9.5-11.0
6-5-3	14.5-16.0
4-4-2	19.5-21.0
3-2-3	24.5-26.0
3-3-3	29.5-31.0
4-4-4	34.5-36.0
5-4-4	39.5-41.0
3-4-6	44.5-46.0
4-5-17	49.5-51.0



EXPLANATION

- FRAGMENTS (refuse)
- CLAY
- SAND

FIGURE 3.
WELL CONSTRUCTION DIAGRAM, MO-4.

MAXINE ROCK DISPOSAL AREA

WELL NO. MO-5

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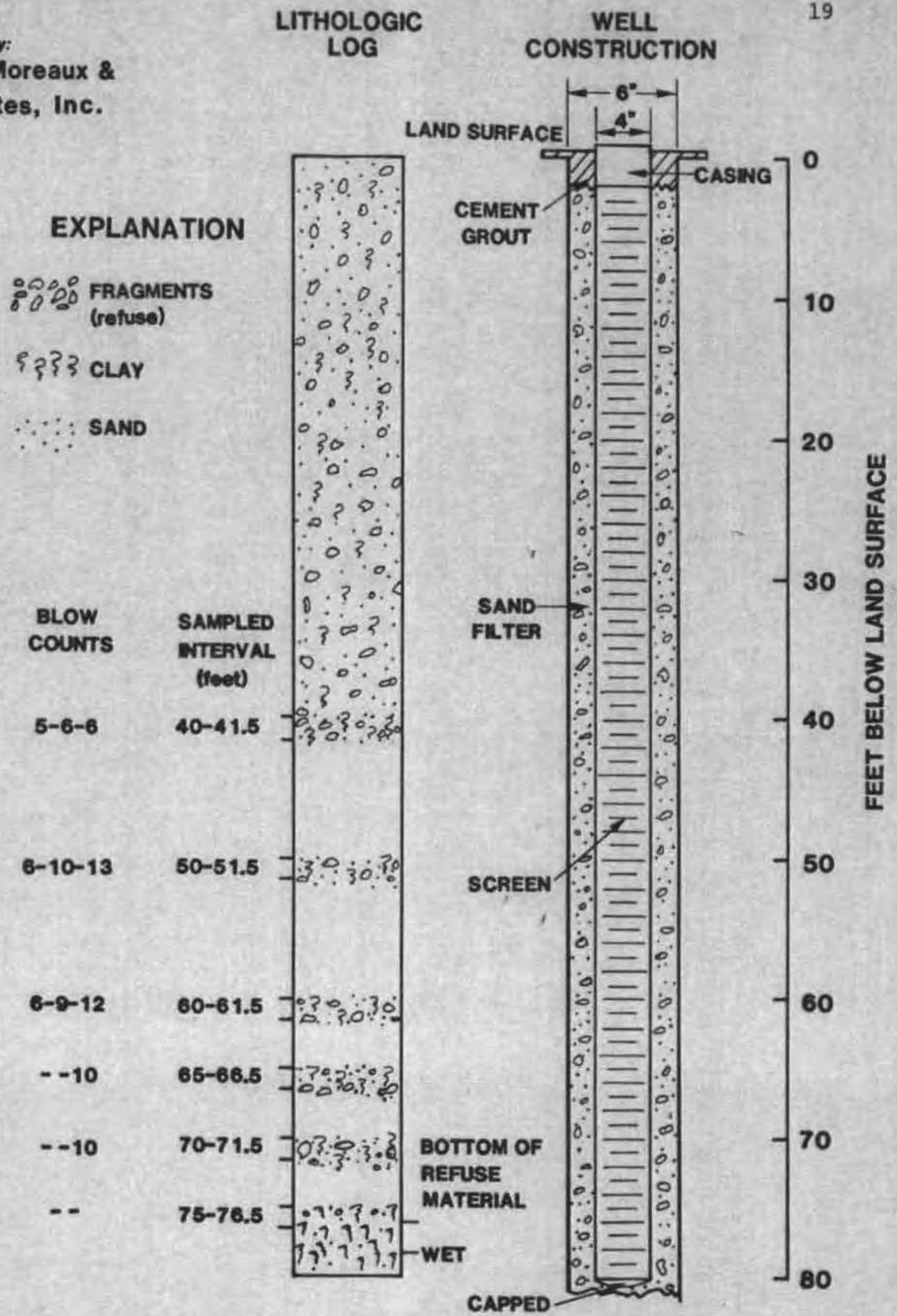


FIGURE 4. WELL CONSTRUCTION DIAGRAM, MO-5.

MAXINE ROCK DISPOSAL AREA WELL NO. MO-6

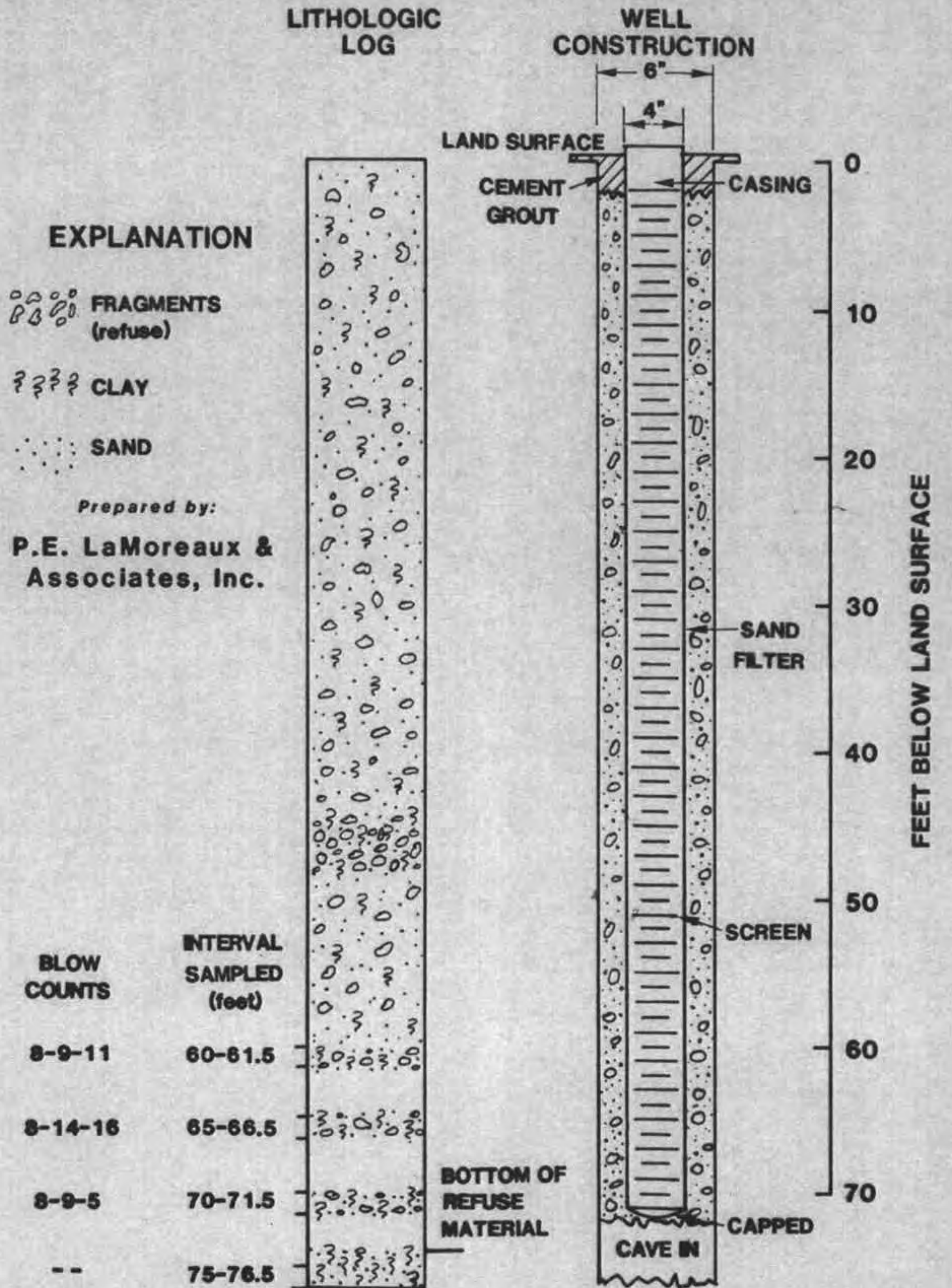


FIGURE 5. WELL CONSTRUCTION DIAGRAM, MO-6.

MAXINE ROCK DISPOSAL AREA
WELL NO. MO-7

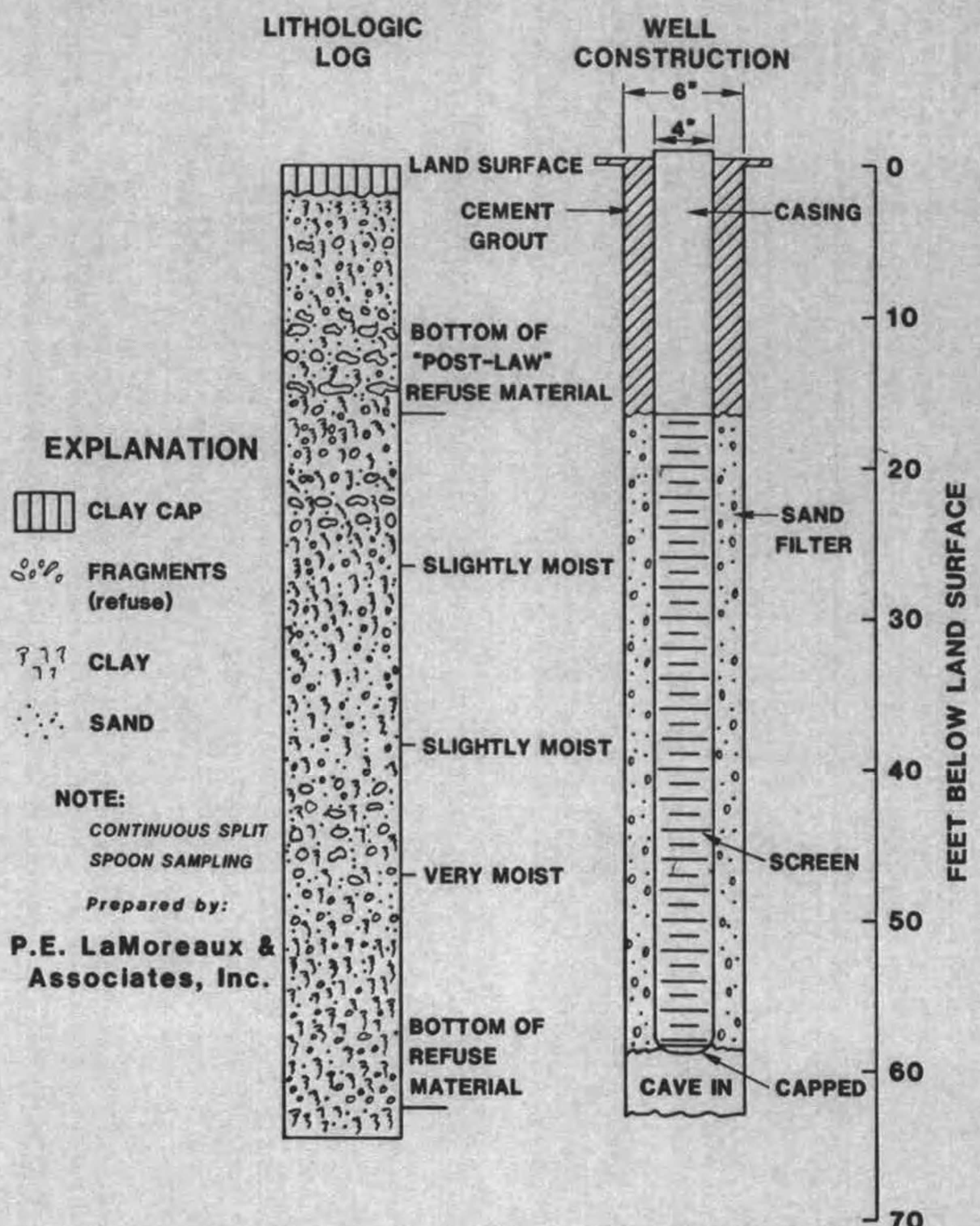
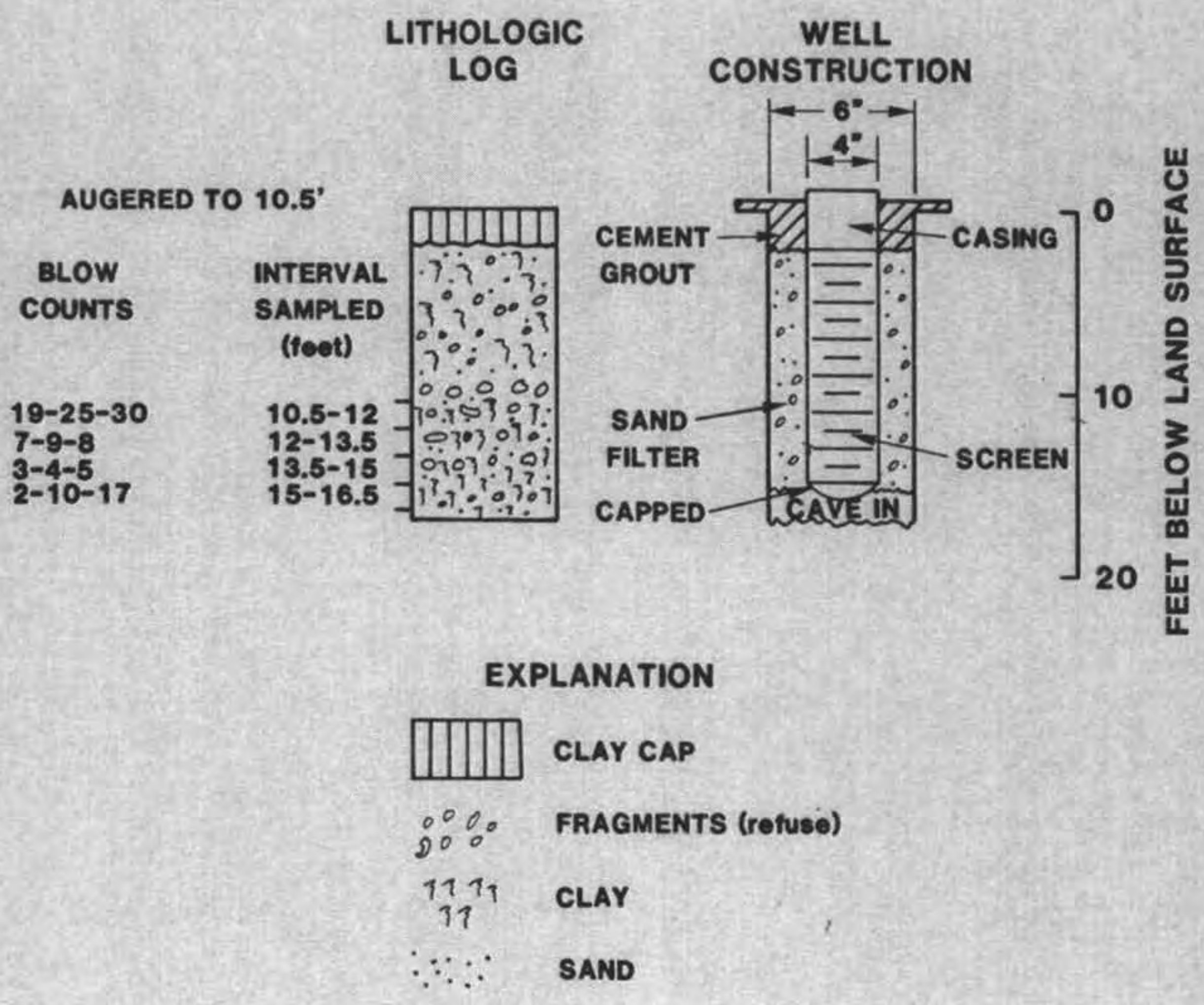


FIGURE 6. WELL CONSTRUCTION DIAGRAM, MO-7.

MAXINE ROCK DISPOSAL AREA WELL NO. MO-8



Prepared by:

P.E. LaMoreaux & Associates, Inc.

FIGURE 7. WELL CONSTRUCTION DIAGRAM, MO-8.

MAXINE ROCK DISPOSAL AREA WELL NO. MO-9

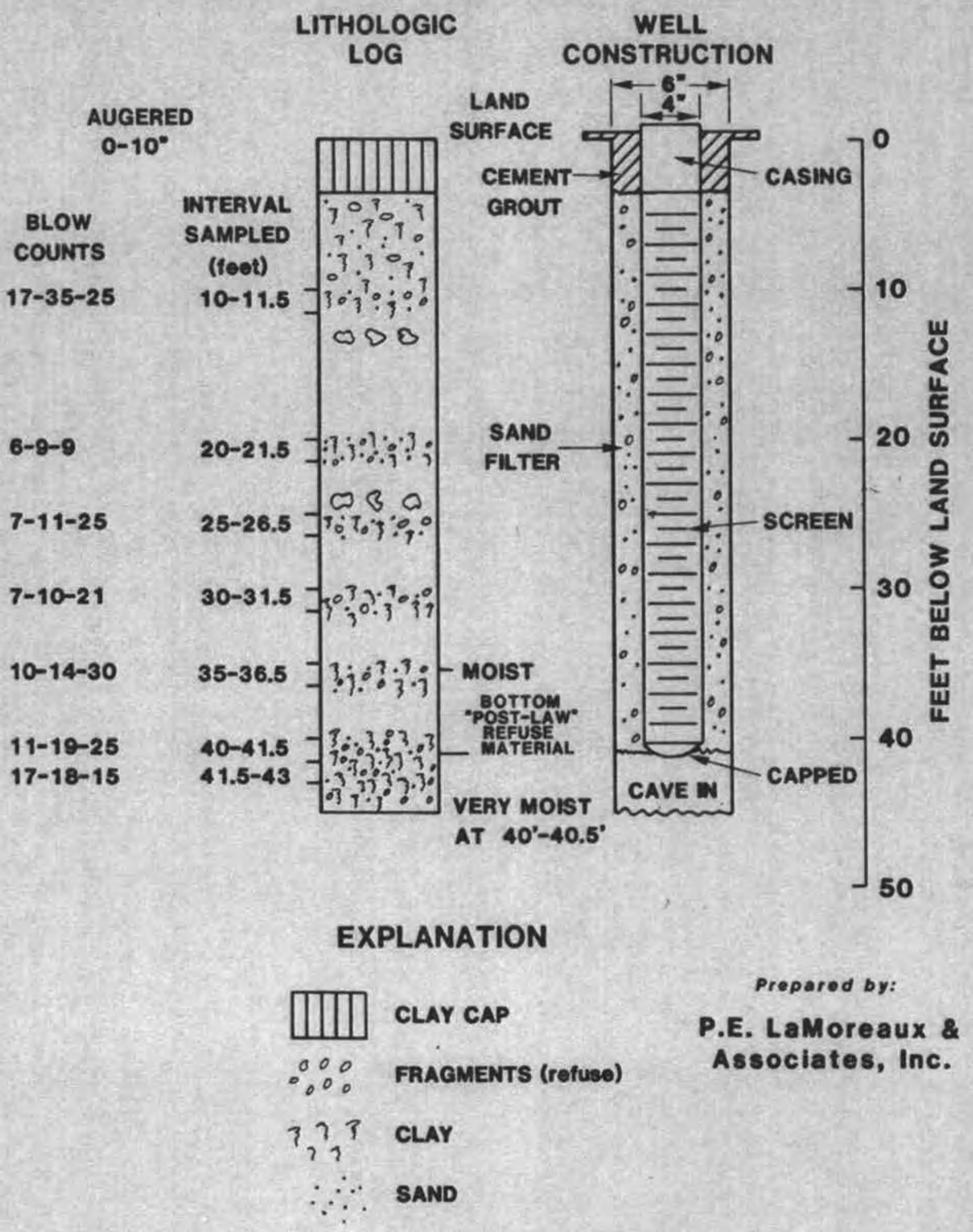


FIGURE 8. WELL CONSTRUCTION DIAGRAM, MO-9.

WATER LEVEL FLUCTUATIONS

Water levels were obtained in wells over the monitoring period (January 18, 1983 to September 5, 1984) by continuous recording devices and regular instantaneous measurements to determine the magnitude of water level fluctuations and the response of ground water to rainfall events. These work elements were performed in compliance with the regulations.

During all monitoring periods wells MO-4, MO-7, MO-8, and MO-9 were dry. Wells MO-8 and MO-9 were established in the capped rock disposal area, and were designed to monitor ground water (if present) within the section of post-law refuse rock. Absence of water in these wells therefore indicates that ground water does not occur in the post-law refuse rock. Based on the absence of water in wells MO-8 and MO-9 and the slope of the original land surface, ground water is absent in the post-law rock in the entire area under the cap. Additional evidence to support this conclusion is that well MO-7, adjacent to well MO-8 and screened in the pre-law refuse rock to the top of native valley fill (about 43 feet below the bottom of post-law rock), has also been dry during the monitoring period. Well MO-4, upgradient from the capped area developed in 50 feet of pre-law disposal rock, has also been consistently dry.

The monitoring wells which have contained water during at least one of the monitoring periods include wells MO-3, MO-5, and MO-6. Wells MO-5 and MO-6, close to dry well MO-4, are established in pre-law refuse rock upgradient from the capped area in the buried stream.

Well MO-6 is generally dry, while adjacent well MO-5 usually contains water (0 to 21 feet). The fluctuation of the ground-water table ranges between 74 and 82 feet below land surface in the vicinity of wells MO-5 and MO-6.

Well MO-3, in pre-law materials downgradient from the capped area, has contained water during every monitoring run, indicating the occurrence of ground water in the valley fill material downgradient from capped area. The fluctuation of the ground-water table ranges between 0 and 24 feet below land surface. The ground-water table in well MO-3 responds rapidly to rainfall events, as illustrated in Figures 9 and 10. The water level in the well rises several feet for each inch of rainfall received in the area.

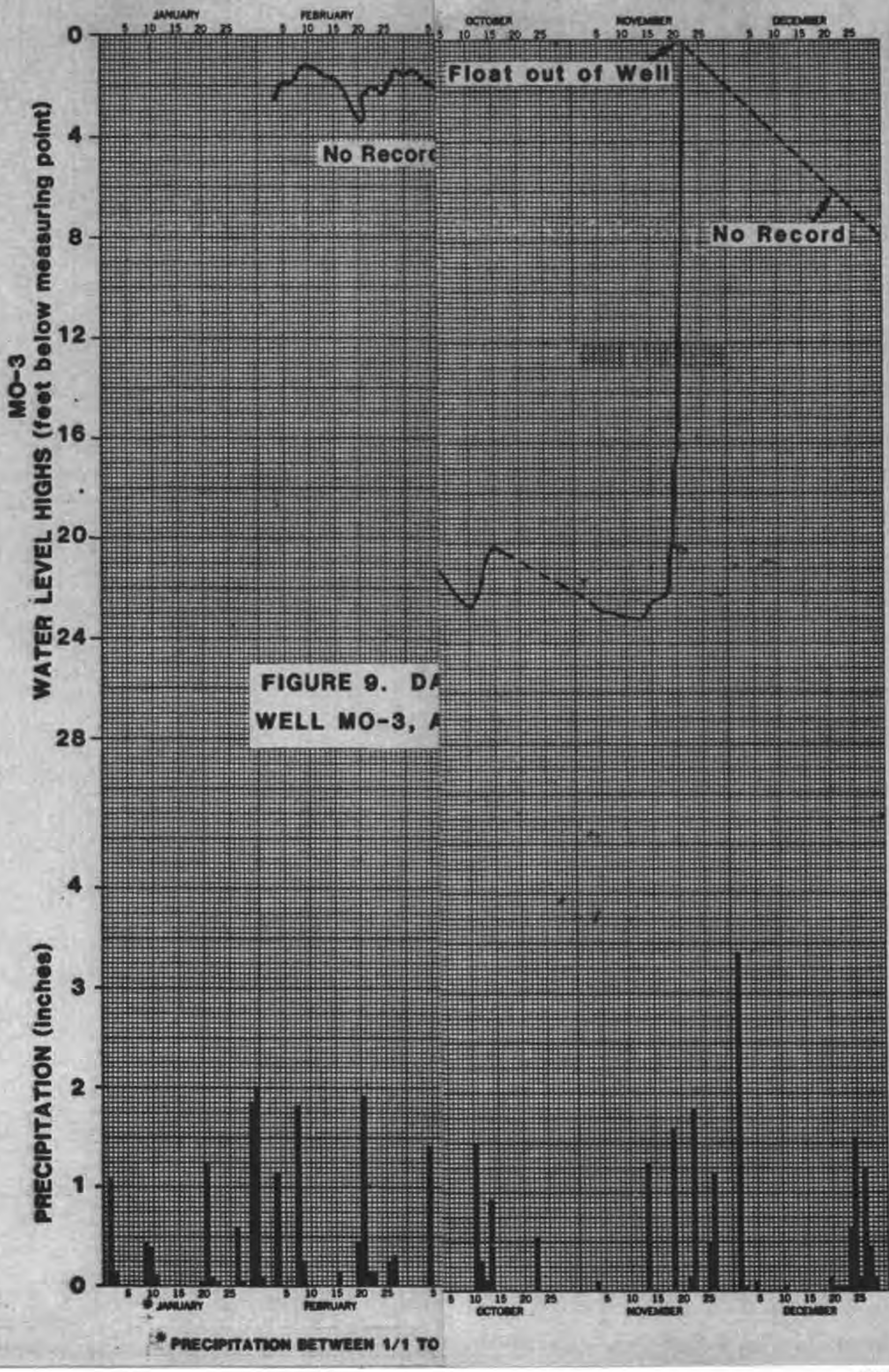


FIGURE 9. DA
WELL MO-3, A

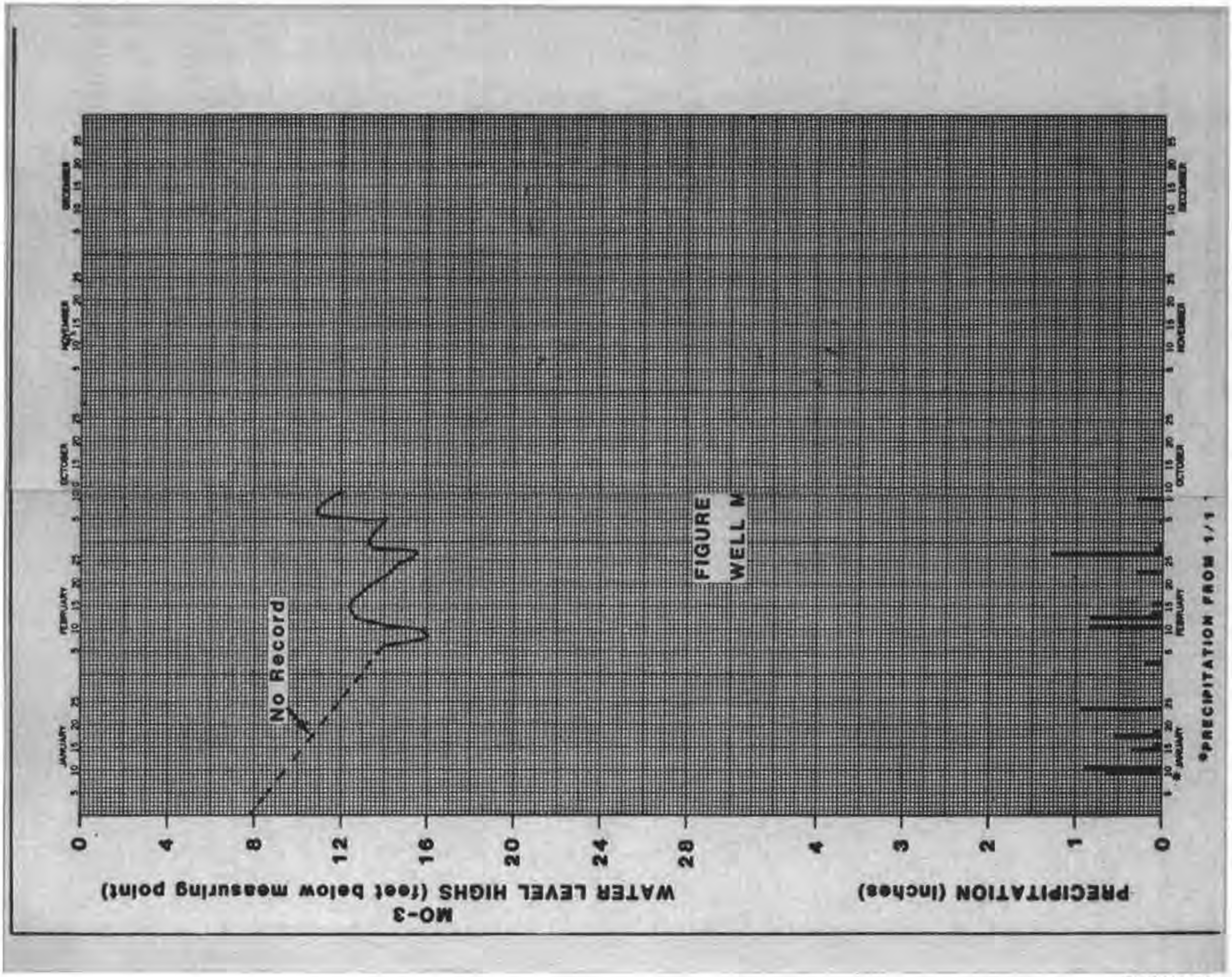


FIGURE
WELL M
MO-3
WATER LEVEL HIGHS (feet below measuring point)
PRECIPITATION (inches)
*PRECIPITATION FROM 1/1
No Record
JANUARY
FEBRUARY
OCTOBER
NOVEMBER
DECEMBER

WATER QUALITY

The ground-water and surface-water monitoring program included collection of samples for analysis whenever sufficient water was available. The physical and water quality parameters monitored included temperature, pH, specific conductance, total iron, total manganese, total dissolved solids, total suspended solids, and sulfate. The first three parameters were determined in the field and the remaining five parameters were determined in the laboratory.

Temperature, pH, specific conductance, total iron, total manganese, and total suspended solids were parameters monitored in accord with Alabama Surface Mining Commission (ASMC) and the Alabama Department of Environmental Management (ADEM) required parameters and in compliance with the regulations. Total dissolved solids and sulfate were chosen as parameters to be monitored because they are indicators of mineralization of ground water. Sulfate was chosen as a parameter to be monitored as it is a common constituent in water of the region.

All results of chemical analyses from surface and ground water at Maxine Mine are given in Table 4. Summaries of some of these analyses are given in Tables 6, 8, and 9. Typical values for pH, iron, specific conductance, and sulfate in ground water from unmined areas of the Pottsville Formation are given in Table 5.

Maxine tbl 4/Disk B39

Table 4. Monitoring data.

SAMPLE SITE	MO-3	MO-4	SW-1	SW-2	SW-3
DATE COLLECTED: February 4, 1983					
Field analysis:					
pH	2.9	-		4.4	2.9
Specific conductance (micromhos)	490	-		172	1,000
Water level (feet below measuring point)	2.58	Dry		1/	1/
Discharge (cfs)	1/	1/		0.25	0.05
Laboratory analysis:					
Total iron (mg/l)	533	-		1.90	501.00
Total manganese (mg/l)	50.50	-		0.11	94
Total dissolved solids (mg/l)	11,252	-		52	30,258
Total suspended solids (mg/l)	432	-		30	133
DATE COLLECTED: March 2, 1983					
Field analysis:					
Temperature (°C)	20	-	27.5	15	24
pH	3.25	-	2.69	4.23	2.64
Specific conductance (micromhos)	7,500	-	7,400	205	14,000
Water level (feet below measuring point)	1.43	Dry	1/	1/	1/
Discharge (cfs)	1/	1/	0.13	0.34	0.05
Laboratory analysis:					
Total iron (mg/l)	800	-	570	0.18	2,200
Total manganese (mg/l)	58	-	56.8	0.09	87.6
Total dissolved solids (mg/l)	12,716	-	12,092	57	32,812
Total suspended solids (mg/l)	156	-	4	16	1
Sulfate (mg/l)	8,600	-	8,750	33	20,400

Maxine tbl 4/Disk B39

Table 4. Monitoring data. (continued)

SAMPLE SITE	MO-3	MO-4	SW-1	SW-2	SW-3
DATE COLLECTED: March 31, 1983					
Field analysis:					
Temperature (°C)	16	-	-	14	15
pH	2.33	-	-	5.30	2.72
Specific conductance (micromhos)	14,800	-	-	30	15,200
Water level (feet below measuring point)	6.03	Dry	1/	1/	1/
Discharge (cfs)	1/	1/	Dry	0.209	0.11
Laboratory analysis:					
Total iron (mg/l)	2,657	-	-	0.13	3,051
Total manganese (mg/l)	118	-	-	0.01	128
Total dissolved solids (mg/l)	36,437	-	-	26	40,088
Total suspended solids (mg/l)	417	-	-	10	0.0
Sulfate (mg/l)	24,700	-	-	17	24,250
DATE COLLECTED: April 29, 1983					
Field analysis:					
Temperature (°C)	20	-	-	22	25
pH	2.75	-	-	4.08	2.68
Specific conductance (micromhos)	-	-	-	-	-
Water level (feet below measuring point)	4.20	Dry	1/	1/	1/
Discharge (cfs)	1/	1/	Dry	0.02	0.01
Laboratory analysis:					
Total iron (mg/l)	1,556	-	-	0.25	2,815
Total manganese (mg/l)	98.4	-	-	0.12	107
Total dissolved solids (mg/l)	27,674	-	-	41	37,401
Total suspended solids (mg/l)	106	-	-	14	1
Sulfate (mg/l)	20,500	-	-	17	27,500

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Maxine tbl 4/Disk 839

Table 4. Monitoring data. (continued)

SAMPLE SITE	MO-3	MO-4	SW-1	SW-2	SW-3
DATE COLLECTED: June 7, 1983					
Field analysis:					
Temperature (°C)	22	-	-	-	23
pH	2.93	-	-	-	2.82
Specific conductance (micromhos)	15,500	-	-	-	17,500
Water level (feet below measuring point)	3.28	Dry	1/	1/	1/
Discharge (cfs)	1/	1/	Dry	Dry	0.01
Laboratory analysis:					
Total iron (mg/l)	2,080	-	-	-	2,975
Total manganese (mg/l)	73.25	-	-	-	83.85
Total dissolved solids (mg/l)	35,441	-	-	-	39,665
Total suspended solids (mg/l)	370	-	-	-	70
Sulfate (mg/l)	26,400	-	-	-	25,600
DATE COLLECTED: July 12, 1983					
Field analysis:					
Temperature (°C)	24	-	-	-	31
pH	3.04	-	-	-	2.60
Specific conductance (micromhos)	10,000	-	-	-	21,500
Water level (feet below measuring point)	20.46	Dry	1/	1/	1/
Discharge (cfs)	1/	1/	Dry	Dry	0.001
Laboratory analysis:					
Total iron (mg/l)	910	-	-	-	2,012
Total manganese (mg/l)	35.94	-	-	-	181.53
Total dissolved solids (mg/l)	13,867	-	-	-	41,481
Total suspended solids (mg/l)	60	-	-	-	17
Sulfate (mg/l)	9,500	-	-	-	27,400

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Table 4. Monitoring data. (continued)

SAMPLE SITE	MO-3	MO-5	MO-7	MO-8	MO-9	SW-1	SW-2	SW-3
DATE COLLECTED: August 26, 1983								
Field analysis:								
pH	2.53	-	-	-	-	-	-	-
Specific conductance (micromhos)	7,500	-	-	-	-	-	-	-
Water level (feet below measuring point)	24.2	Dry	Dry	Dry	Dry	1/	1/	1/
Discharge (cfs)	1/	1/	1/	1/	1/	Dry	Dry	Dry
Laboratory analysis:								
Total iron (mg/l)	433	-	-	-	-	-	-	-
Total manganese (mg/l)	47	-	-	-	-	-	-	-
Total dissolved solids (mg/l)	10,522	-	-	-	-	-	-	-
Total suspended solids (mg/l)	37	-	-	-	-	-	-	-
Sulfate (mg/l)	7,300	-	-	-	-	-	-	-
DATE COLLECTED: September 14, 1983								
Field analysis:								
pH	3.30	-	-	-	-	-	-	-
Specific conductance (micromhos)	10,000	-	-	-	-	-	-	-
Water level (feet below measuring point)	19.79	*	Dry	Dry	Dry	1/	1/	1/
Discharge (cfs)	1/	1/	1/	1/	1/	Dry	Dry	Dry
Laboratory analysis:								
Total iron (mg/l)	1,476	-	-	-	-	-	-	-
Total manganese (mg/l)	48.29	-	-	-	-	-	-	-
Total dissolved solids (mg/l)	17,029	-	-	-	-	-	-	-
Total suspended solids (mg/l)	158	-	-	-	-	-	-	-
Sulfate (mg/l)	11,500	-	-	-	-	-	-	-

* Approximately 0.5 foot of water in well.

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Maxine tbl 4/Disk B39

Table 4. Monitoring data. (continued)

SAMPLE SITE	MO-3	MO-5	MO-7	MO-8	MO-9	SW-1	SW-2	SW-3
DATE COLLECTED: November 4, 1983								
Field analysis:								
pH	4.25	4.15	-	-	-	-	-	-
Specific conductance (micromhos)	9,600	8,200	-	-	-	-	-	-
Water level (feet below measuring point)	22.36	77.59	Dry	Dry	Dry	1/	1/	1/
Discharge (cfs)	1/	1/	1/	1/	1/	Dry	Dry	Dry
Laboratory analysis:								
Total iron (mg/l)	955.5	1,000	-	-	-	-	-	-
Total manganese (mg/l)	55.75	102.5	-	-	-	-	-	-
Total dissolved solids (mg/l)	19,836	19,284	-	-	-	-	-	-
Total suspended solids (mg/l)	1,153	16,280	-	-	-	-	-	-
DATE COLLECTED: January 5, 1984								
Field analysis:								
pH	3.2	2.3	-	-	-	-	5.55	3.35
Specific conductance (micromhos)	4,300	10,000	-	-	-	-	122	13,000
Water level (feet below measuring point)	8.54	69.98	Dry	Dry	Dry	1/	1/	1/
Discharge (cfs)	1/	1/	1/	1/	1/	Dry	<5	<5
Laboratory analysis:								
Total iron (mg/l)	361	844	-	-	-	-	**0.02	2,275
Total manganese (mg/l)	19.5	27.39	-	-	-	-	0.05	45.96
Total dissolved solids (mg/l)	6,342	15,636	-	-	-	-	170	31,444
Total suspended solids (mg/l)	1,535	5,135	-	-	-	-	14	1.5
Sulfate (mg/l)	4,500	10,400	-	-	-	-	22.5	20,700

** Below detection limit.

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